

Date: Thursday, 06/11/2008 2:04:14 PM
 User: Linda Lacelle

Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services			Drawing Name	: 6" MIRROR		
Job Number	: 43235			Part Number	: D2011101		
Estimate Number	: 10101			Drawing Number	: D2011 REV G		
P.C. Number	:			Project Number	: N/A		
This Issue	: 06/11/2008	S.O. No.	:	Drawing Revision	: G		
Prsht Rev.	: NC			Material	:		
First Issue	: 06/11/2008	Type	: PURCHASED PARTS	Due Date	: 13/11/2008	Qty:	3
Previous Run	: 40739			Um:	Each		
Written By	:			KJ/JLM			
Checked & Approved By	:			EC			
Comment	: Est: J 04.09.15 Added Steps 5-7 Est: K 05.12.15 chg black sikaflex for white Est L 08.11.06 new drawing			EC	EC verify: DD		

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
1.0	PG	PURCHASING
Comment: PURCHASING		
2.0	CHM10601	Mirror 6"
Comment: Qty.: 1.0000 Each(s)/Unit Total : 30.0000 Each(s) Mirror 6" <i>R10:7526 C20811106</i> <i>(31)</i>		
Comment: PACKAGING RESOURCE #1		
3.0	PACKAGING 1	PACKAGING RESOURCE #1
Comment: PACKAGING RESOURCE #1 Recieve & Inspect for Transit Damage Ensure Material Release Note is attached <i>Packag/14 (31)</i>		
4.0	QC6	DIMENSIONAL CHECK
Comment: DIMENSIONAL CHECK <i>S 08/11/18 (31) counter</i>		
5.0	D2829	Threaded Stud
Comment: Qty.: 1.0000 Each(s)/Unit Total : 30.0000 Each(s) Threaded Stud <i>B43254 Ep08/11/19</i>		

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Thursday, 06/11/2008 2:04:14 PM
User: Linda Lacelle

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 6" MIRROR

Job Number: 43235

Part Number: D2011101

Job Number:



Seq. #: Machine Or Operation:

Description :

6.0 D30141 Locknut



Comment: Qty.: 1.0000 Each(s)/Unit Total : 30.0000 Each(s)

Locknut

Pick:

Qty	Part Number	Description	Batch
1	D3014-1	Lock nut	625021

7.0 AN960JD416L Washer



Comment: Qty.: 1.0000 Each(s)/Unit Total : 30.0000 Each(s)

Washer

Pick:

Qty	Part Number	Description	Batch
1	AN960JD416L	Washer	1109388

8.0 SMALL FAB 1 SMALL & MEDIUM FAB RESOURCE 1



Comment: SMALL & MEDIUM FAB RESOURCE 1

1- Discard Hardware & Install new hardware loosely

2- Crimp stud as per Dwg D20111

9.0 QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

4- Test assembly to 500lb pull test after 24 hours

Not done at step 4.0 S

Ep08/11/19 (31)

10.0 PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: ST 221

8 08/11/20 (X3)

11.0 QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



MF 08-11-21

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

ITEM	QTY -101	QTY -103	P/N	DESCRIPTION
1	X		D2011-101	MIRROR ASSEMBLY 6"
2		X	D2011-103	MIRROR ASSEMBLY 8"
3	1		D2829	THREADED STUD
4	1		D3014-1	LOCKNUT
5		1	D3015-3	LOCKNUT
6	1		CHM10601	MIRROR 6" (AUTOPART)
7		1	708441	MIRROR 8" (VELVAC)
8	1		AN960JD416L	WASHER
9		1	AN960JD516	WASHER

D2011-101 MIRROR ASSEMBLY 6"

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: D2011-101 = 0.6 lbs APPROX. ; D2011-103 = 1.0 lbs APPROX.
- 8) D2829 INSTALLATION PROCEDURE:
 - APPLY LOCKTITE 262 TO \varnothing 5/16 END OF D2829
 - THREAD BY HAND INTO BALL MOUNT UNTIL ENTIRE \varnothing 5/16 END OF D2829 IS WITHIN BALL MOUNT
 - CRIMP BALL MOUNT ON TWO OPPOSING SIDES, 0.19 FROM END AS ILLUSTRATED USING TOOL DT8317
 - CRIMP TO DEPTH OF 0.040 ± 0.010 USING R0.125
- 9) INSTALL LOOSE

D2011-103 MIRROR ASSEMBLY 8"

RELEASED
08.10.2006
NO. 43235

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED
SUBJECT TO AMENDMENT
WITHOUT NO FURTHER
WORK OR PULL
NO. 43235

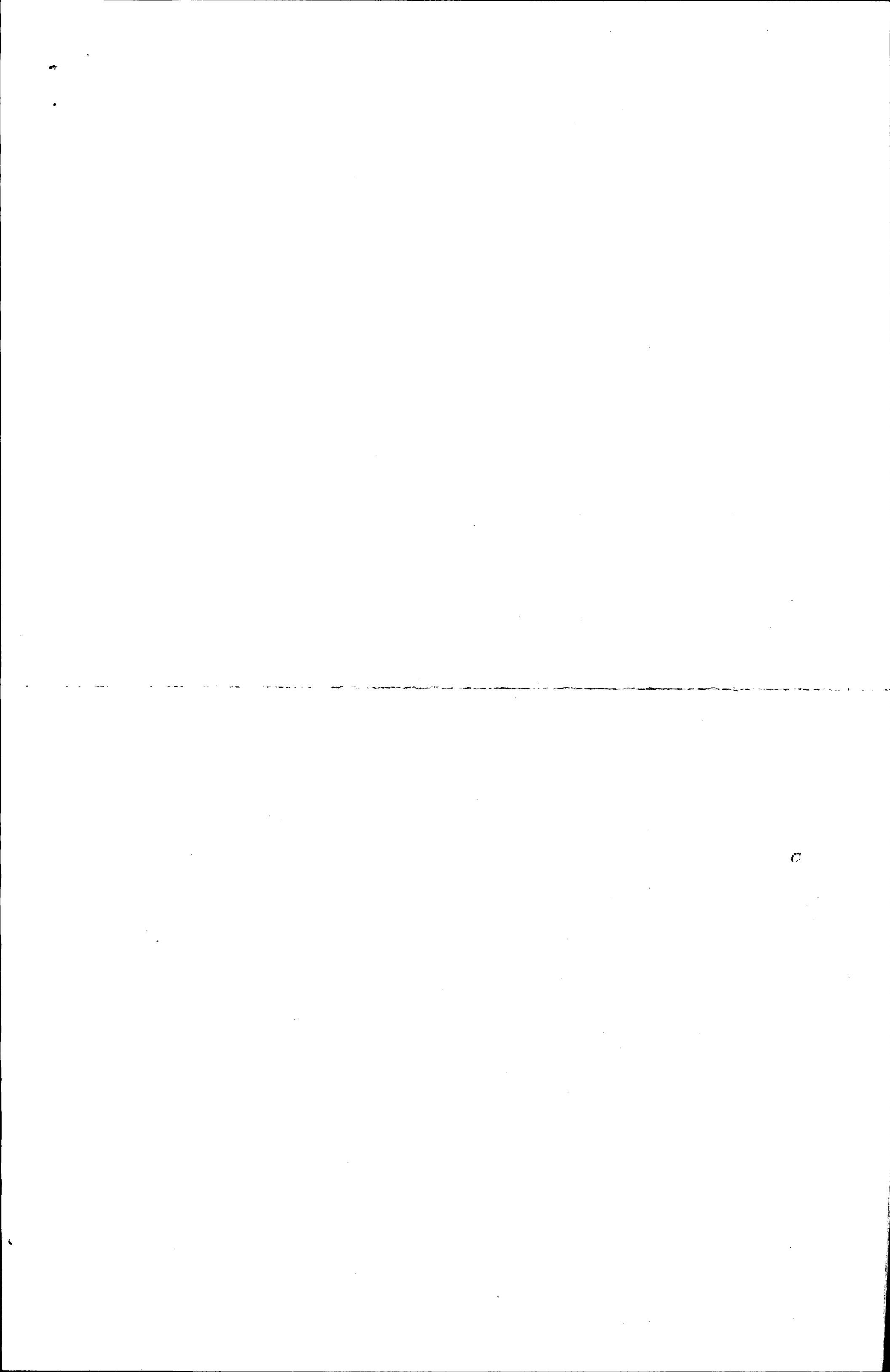
DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DESIGN **JB** **DRAWN** **JS** **CHECKED** **JS** **MFG. APPR.** **JS** **APPROVED** **JS** **DE APPR.** **JS** **DATE** **08.10.06**

DRAWING NO. **D2011** **REV. G** **SHEET 1 OF 1**

TITLE **MIRROR ASSEMBLY** **SCALE** **NTS**

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DART

Purchase Order

Date Nov 06, 2008	Page 1
Purchase Order Number PO00007526	

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, Ontario K6A 1K7
Phone: (613)632-9577
Fax: (613)632-1053

FAXED
6/8/10

Vendor Address:

Auto Parts Extra
1000rue Lansdowne
Hawkesbury, ON K6A 1H7
Canada
Phone (613) 632-1191
Fax (613) 632-2350

Ship To:

Main Finished Goods Location
Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, Ontario K6A 1K7

Reference	Contact	Vendor Number VC-AUT001	PO Date Nov 06, 2008	Terms N30	Ship Via yours	Expected Arrival Nov 10, 2008

Qty. Ordered	Item Number	Description	Expected Arrival	Drop-Ship	Unit Cost	UOM	Extended Price
31.0000	CHM10601	Mirror 6" B43235 Comments: AS PER DWG D2011 REV. G P/N: CHM10601 B43235	10/11/2008	No	18.950000	Each	587.45

CERTIFICATE OF CONFORMITY
REQ'D UPON DELIVERY

Comments:	Tax Summary:	29.37	Less: included tax	0.00
	GST			
	GSTM	0.00		
	GSTD	0.00		
			Subtotal	587.45
			Total tax	29.37
			Total purchase order in	
			CAD Dollars	616.82

Entered By: *C L* CLAVOIE

Approved By: *W*

Eric Charbonneau

From: David Shepherd [dshepherd@dartaero.com]
Sent: November 18, 2008 2:55 PM
To: 'Eric Charbonneau'; 'Jason Murdoch'
Cc: 'David Duval'; 'Mike Petsche'; 'Marc Bellavance'; 'L Lacelle'; 'Bill Beckett'
Subject: RE: 6" mirror

Eric/Jason,

As discussed at the Engineering Mtg this morning, I am in agreement with Marc's 2nd opinion on the 6" mirror as outlined below. My recollection was that we started testing the 6" mirrors only when we found out the mirror faces were falling out in flight and we had to start gluing them in.

When I reviewed the revised drawing, I noticed that the pull testing was being eliminated. It was my understanding that the new mirror has been tested several times and we don't have the same concern about mirror faces falling out. We currently do not test the 8" mirror at all. It is not general practice to pull something to limit load during production because it tends to weaken the part.

So, I think we should go lean and eliminate the 50 lb pull test on the mirrors.

David

PS. Having said this, mirrors will spontaneously start falling apart again in the air.

From: Marc Bellavance [rtaero.com mailto:mbellavance@dartaero.com]
Sent: Tuesday, November 18, 2008 6:43 AM
To: 'Eric Charbonneau'; 'Jason Murdoch'; 'David Shepherd'; 'Mike Petsche'
Cc: 'David Duval'
Subject: RE: 6" mirror

Come to think of it, and someone please correct me if I'm wrong, the purpose of the test on Rev. F was to ensure that the Sikaflex was holding the mirror to the housing.

With Rev. G, there is no more need for Sikaflex because the mirror passed the pull test and this is why the note has been removed.

I have agreed with Jason in a previous email but I'm changing my position on the basis of what led to the removal of the note.

Furthermore, we are not testing the -103 Mirror and for the same reason.
So I don't see why we need to do the pull test anymore.

Marc Bellavance
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Web: [rtaero.com](http://www.dartaero.com/) <http://www.dartaero.com/> "www.dartaero.com"

From: Eric Charbonneau [rtaero.com mailto:echarbonneau@dartaero.com]
Sent: November 18, 2008 8:18 AM
To: 'Jason Murdoch'; 'David Shepherd'; 'Mike Petsche'
Cc: 'David Duval'; mbellavance@dartaero.com
Subject: RE: 6" mirror